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October 31, 2005

Director of the US Patent and Trademark
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Mail Stop 16
P.O. Box 145
Alexandria, VA 22313-1450

RE: Deposit Account No. 500631

Dear Sir or Madam:

On September 23, 2005, our firm filed a Response to a non-final Office action, which also included an Information Disclosure Statement (IDS) in Application No. 09/775,019 (copies enclosed). A check in the amount of \$180 was included for the IDS fee (and was subsequently cashed by the USPTO (*copy enclosed*)).

In our recent Deposit Account statement, however, we noticed two charges were made against the above-identified application in the amounts of \$180 (fee code 1806 for IDS) and \$25 (fee code 2202 for additional claim fees - assumed small entity). Since the proper fee was included with the filing of the IDS and there were no additional claims, there should have been no additional fees necessary.

We, therefore, respectfully request that you credit our deposit account no. 50-0631 in the amount of \$205 (\$180 and \$25) to refund the erroneous charges as soon as possible.

If you have any questions or require additional information or documentation, please contact my assistant, Peggy S. Pepitone or me.

Very truly yours,



Michael R. Long, Reg. No. 42,808

/psp

Enclosures: as stated

Adjustment date: 12/07/2005 SDEB081
10X11/2005 LLITTLE 00000003 500631 09775019
01 FC:1806 180.00 CR
02 FC:2202 25.00 CR

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September 23, 2005

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Applicant: David Griffith
Title: ACTUARY-MANIPULABLE RATING MODEL AND SYSTEM
Application No.: 09/775,019 Filed: February 1, 2001
Examiner: Pass, Natalie Group Art Unit: 3626
Atty. Docket No.: 027-0001 Conf. No.: 7486

Dear Sir:

Transmitted herewith are the following documents in the above-identified application:

- ☒ Response to Non-Final Office Action (10 page(s))
☐ Petition for Extension of Time (month) (page(s))
☒ Information Disclosure Statement (2 page(s)), including PTO/SB0/8A and/or
PTO/SB/08B (1 page(s)), and copies of 1 reference(s)
☐ Other: (page(s))
☐ Other: (page(s))
☐ Other: (page(s))
☒ Transmittal Letter (2 page(s));
☒ Return postcard;

The Total Fee has been calculated as shown below:

	Pending Claims	Claims Previously Paid	Extra Claims	Fees
Total Claims	19 24	- 24 =	0 x \$50.00 =	0.00
Independent Claims	3	- 5 =	0 x \$200.00 =	0.00
Multiple Dependent Claims (if any) - \$360.00 fee				
Additional Claims Fee				\$.00
Fee For Extension Of Time				
Other Fees: (IDS)				\$180.00
TOTAL FEE DUE:				\$ 180.00

- ☐ Small entity status is entitled to be asserted for the application.
☒ A check is enclosed for the Total Fee shown above.
☐ Please charge the Total Fee shown above to Deposit Account 50-0631.
☒ The Commissioner is hereby authorized to charge any deficiency in fees and any additional fees under 37 C.F.R. § 1.16 or 1.17, that may be required during the pendency of this application, and to similarly credit any overpayment, to Deposit Account 50-0631.


September 23, 2005
RE: 09/775,019
Page 2 of 2

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CERTIFICATE OF MAILING OR TRANSMISSION

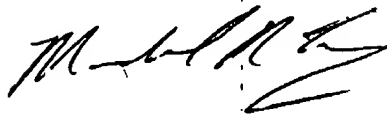
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☐ facsimile transmitted to the US Patent and Trademark Office.

 09-23-05
Michael R. Long Date

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Respectfully submitted,



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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): David Griffith
Title: ACTUARY-MANIPULABLE RATING MODEL AND SYSTEM
Application No.: 09/775,019 Filed: February 1, 2001
Examiner: Pass, Natalie Group Art Unit: 3626
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Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

September 23, 2005

RESPONSE TO NON-FINAL OFFICE ACTION

This paper is responsive to the Non-Final Office Action mailed on June 29, 2005, having a shortened statutory period for response set to expire September 29, 2005. In light of the Amendments and/or Remarks herein, further examination is requested.

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AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated in the following listing of all claims:

1. (Withdrawn) A method of quoting an insurance product, the method comprising:
defining an actuary-manipulable representation of a rating model, the actuary-manipulable representation including variables, factor tables and calculation sequences of the rating model;
from the actuary-manipulable representation, preparing an executable representation thereof; and
executing the executable representation to calculate a quote for the insurance product.
2. (Withdrawn) The method of claim 1, wherein the rating model defining includes:
defining the variables;
defining the factor tables with one or more axes bound to respective ones of the variables;
and
defining the calculation sequences in terms of steps operative on values of the variables and cells of the factor tables.
3. (Previously Presented) The method of claim 24,
wherein the rating model defining is performed in accordance with a predefined document type definition.
4. (Previously Presented) The method of claim 24,
wherein the transforming to the executable representation includes compilation of the actuary-manipulable representation to a platform independent executable form.
5. (Previously Presented) The method of claim 24, wherein the executable representation includes:
predefined input and output interfaces;
a runtime lookup facility for identification of runtime identifiers in the executable representation corresponding to ones of the variables; and

a calculate method of the compiled rating model executable to generate the quote based on inputs supplied via the input interface.

6. (Original) The method of claim 5, further comprising:
employing the runtime lookup facility to identify particular runtime identifiers
corresponding to particular variables;
setting values for the particular variables using the corresponding runtime identifiers and
the predefined input interface; and
retrieving the quote via the predefined output interface.
7. (Previously Presented) The method of claim 24,
wherein the actuary-manipulable representation includes markup language encoded
metadata.
8. (Previously Presented) The method of claim 24,
wherein the actuary-manipulable representation is XML encoded.
9. (Previously Presented) The method of claim 24,
wherein the actuary-manipulable representation includes a graphical user interface
presentation of the variables, factor tables and computational flows of the rating
model based on markup language encoded metadata.
10. (Original) A method of preparing an executable representation of a rating model, the
method comprising:
defining an actuary-manipulable representation of a rating model, the actuary-
manipulable representation including variables, factor tables and calculation
sequences of the rating model, the factor tables having one or more axes bound to
respective ones of the variables and the calculation sequences defined in terms of
steps operative on values of the variables and cells of the factor tables;
transforming the actuary-manipulable representation to the executable representation, the
executable representation including a runtime lookup facility for identification of
runtime identifiers in the executable representation corresponding to ones of the

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variables and a calculate method executable to generate a quote based on inputs supplied via a predefined input interface.

11. (Original) The method of claim 10, wherein, for a particular calculation sequence of the actuary-manipulable representation, the transforming includes:

decomposing the particular calculation sequence into layers, each layer including those steps thereof that are at a same flow control level;
for each layer, traversing the steps thereof to identify those of the variables used by the layer;
for each layer, traversing the calculation sequence to identify the steps of the layer targeted by other steps of the calculation sequence and emitting code allocating storage for results of the targeted steps; and
for each layer, emitting code for variable test and index calculations of the layer.

12. (Original) The method of claim 10, wherein the transforming includes:
emitting, for a particular calculation sequence, both logged and non-logged versions of the executable representation.

13. (Original) The method of claim 10,
wherein the transforming includes a two-step compilation,
a first step thereof producing a platform independent source form from the actuary-manipulable representation, and
a second step thereof producing the executable representation from the platform independent source form.

14. (Original) The method of claim 10,
wherein the runtime lookup facility of the executable representation includes a predefined interface for obtaining the runtime identifiers corresponding to respective ones of the variables and factor tables of the rating model; and
wherein the runtime identifiers allow client code to set and access runtime storage corresponding to respective ones of the variables and factor tables.

15. (Original) The method of claim 14,
wherein the client code is part of a networked information service; and
wherein the executable representation of the rating model is employed to prepare a quote
for presentation by the networked information service.
16. (Withdrawn) A rating model definition environment comprising:
a graphical user interface for definition of a markup language encoded representation of
variables, factor tables and computational flows of a rating model;
the graphical user interface allowing a user thereof to bind one or more axes of individual
factor tables to respective ones of the variables;
the graphical user interface further allowing the user thereof to define calculation
sequences in terms of steps operative on values of the variables and cells of the
factor tables; and
a compiler for transformation the markup language encoded representation of the rating
model into an executable form thereof.
17. (Withdrawn) The rating model definition environment of claim 16,
wherein the compiler emits lookup methods for runtime identification of identifiers
corresponding to variables.
18. (Withdrawn) The rating model definition environment of claim 16,
wherein the markup language encoded representation includes XML encoded metadata;
wherein the compiler emits Java source; and
wherein the transformation includes further compilation of the Java source.
19. (Original) A computer program product comprising:
a compiled rating model corresponding to a calculation base including variables, factor
tables and calculation sequences thereof, wherein one or more axes of the factor
tables are bound to respective ones of the variables, and wherein the calculation
sequences are defined in terms of steps operative on values of the variables and
cells of the factor tables;

a lookup facility to identify runtime identifiers corresponding to runtime instances of the variables;
 an input interface including access methods for setting values for the runtime instances of the variables using the corresponding runtime identifiers; and
 a calculate method of the compiled rating model executable to generate result of the calculation sequences based on the set values.

20. (Original) The computer program product of claim 19,
 wherein the runtime identifiers allow client code to employ the compiled rating model without knowledge of internals thereof.

21. (Original) The computer program product of claim 20,
 wherein the client code is a component of a networked information service; and
 wherein the networked information service sets values for the runtime instances of the variables and invokes the calculate method of the compiled rating model to generate a quote based thereon.

22. (Currently amended) An apparatus comprising:
 means for defining calculation-base an actuary-manipulable representation of a rating model including variables, factor tables and calculation sequences thereof,
 wherein one or more axes of the factor tables are bound to respective ones of the variables, and wherein the calculation sequences are defined in terms of steps operative on values of the variables and cells of the factor tables; and
 means for preparing from the actuary-manipulable representation an executable representation thereof.

23. (Original) The apparatus of claim 22,
 wherein the means for preparing includes means for compiling the actuary-manipulable representation; and
 wherein the actuary-manipulable representation includes means for obtaining runtime identifiers corresponding to at least the variables and factor tables.

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24. (Previously Presented) The method of claim 10, further comprising:
executing the executable representation to calculate a quote for an insurance product.

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REMARKS

This paper is responsive to the Non-Final Office Action dated June 29, 2005. Claims 1-24 are pending. In the present Office Action: claims 1, 2 and 16-18 were withdrawn from further consideration; and claims 3-15 and 19-24 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2002/0046064 (hereinafter "Maury"). Applicant has amended claim 22 to correct a minor antecedent basis problem.

Applicant believes that a brief review of Applicant's claimed subject matter may help to move this case toward allowance. As is set forth in Applicant's background, in the insurance industry, rating is a sequence of calculations that translates the level of coverage provided by a particular policy into a dollar amount for the policy's premium. Rating calculations are based on the probability of events occurring. Typically, actuaries define a calculation sequence using statistical methods in census data about a group of individuals, such as all individuals eligible for a specific insurance plan. When taken together, a calculation sequence, variables and factor tables (or tables of adjustments) make up a rating model. An insurance company will typically have a rating model for each line of insurance it offers. Unfortunately, current computational techniques generally require a high level of programming expertise for creation and maintenance of a given rating model. In part, because of this requirement conventional rating systems are often maintained by an information technology department, based on coding requests from actuaries or other business users. Thus, cycle times for preparation of quotes or other rating results, based on a new or revised rating model, can vary from days to weeks. Using conventional approaches, computational times can be substantial even for an existing rating model. As a result, existing approaches are generally inadequate for real-time quotes.

According to various embodiments of the present invention, an actuary-manipulable rating model is defined and transformed into executable form using automated techniques. By allowing business users to define, review and revise rating models using familiar methodologies and constructs (such as factor tables) and by providing an automated facility for transformation of the rating model into an efficient executable form, systems and techniques in accordance with various embodiments of the present invention facilitate rapid deployment and update of insurance product offerings.

As is set forth in Applicant's specification at page 5, lines 2-4, forms suitable for manipulation by business users, for example, actuaries, underwriters, and product managers, etc., are referred to as actuary-manipulable forms, without loss of generality. According to one aspect of the present invention, a calculation base 110 defines variables, adjustments (for example, in the form of factor tables) and calculation sequences appropriate to a given rating model.

With specific reference to Applicant's independent claims 10, 19 and 22, Applicant submits that each of these claims define a rating model to include variables, factor tables and calculation sequences. The factor tables are further defined to have one or more axes bound to respective ones of the variables and the calculation sequences are further defined in terms of steps operative on values of the variables and cells of the factor tables. Moreover, in claims 10 and 22, the rating model is defined as an actuary-manipulable representation of a rating model.

At the outset, Applicant submits that it is not apparent that Maury is even an appropriate prior art reference under 35 U.S.C. §102(e), as the Examiner has not supplied a copy of provisional application serial no. 60/206,007 (hereinafter the "'007 application'") to which Maury claims the benefit of the filing date or pointed out where the teachings of Maury are present in the '007 application. Concurrent with the filing of this response, Applicant has submitted an information disclosure statement citing the '007 application. Turning to the rejection of claims 3-15 and 19-24 in view of Maury, Applicant respectively submits that Maury does not define a rating model (or an actuary-manipulable representation of a rating model) that includes variables, factor tables and/or a calculation sequence that is defined in terms of steps operative on values of the variables and cells of the factor tables and, as such, it is essentially irrelevant whether the cited Maury passages have support in the '007 application. In sum, Maury merely describes its rating engine as a proprietary rating engine and is devoid of a description of a rating model utilized by its rating engine and, as such, does not teach or suggest Applicant's claimed subject matter.

More specifically, Maury (paragraph 30) states that rating engine 64 includes a knowledge-based management system (KBMS) module 66 and a KBMS database 68 that reside on rating engine server 48. With reference to Maury paragraph 38, the rating engine 64 is, for example, a proprietary rating engine developed by Agency Management System, Inc. and

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Lexitech. To reiterate, Maury is devoid of a description of the Maury rating engine and its functionality. Furthermore, Maury lacks any description of an actuary-manipulable representation of a rating model. In sum, it appears that the rejection of claims 3-15 and 19-24 is based on impermissible hindsight in view of Applicant's own disclosure. For at least the above reasons, independent claims 10, 19 and 22 are allowable over Maury. Furthermore, claims 3-9, 11-15, 20, 21, 23 and 24 are also allowable for at least the reason that they depend upon allowable claims. Additionally, withdrawn claims 1, 2 and 16-18 are also allowable over Maury for most of the reasons set forth above.

In summary, claims 1-24 are in the case. All claims are believed to be allowable over the applied art of record, and a Notice of Allowance to that effect is respectfully solicited. Nonetheless, if any issues remain that could be more efficiently handled by telephone, the Examiner is requested to call the undersigned at the number listed below.

CERTIFICATE OF MAILING OR TRANSMISSION

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☐ facsimile transmitted to the US Patent and Trademark Office.

Michael R. Long 09-23-05
 Michael R. Long Date

EXPRESS MAIL LABEL: _____

Respectfully submitted,

Michael R. Long

Michael R. Long, Reg. No. 42,808
 Attorney for Applicant(s)
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): David Griffith
 Title: ACTUARY-MANIPULABLE RATING MODEL AND SYSTEM
 Application No.: 09/775,019 Filed: February 1, 2001
 Examiner: Pass, Natalie Group Art Unit: 3626
 Atty. Docket No.: 027-0001 Confirmation No.: 7486

Mail Stop Amendment
 COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, VA 22313-1450

September 23, 2005

INFORMATION DISCLOSURE STATEMENT
37 C.F.R. § 1.97(c)

Dear Sir:

Pursuant to 37 C.F.R. § 1.56, § 1.97 and § 1.98, the undersigned brings to the Examiner's attention in the above-identified application the patents, publications, applications or other information identified in the attached:

- ☒ Form(s) PTO/SB/08A (1 page(s), with copy of 1 reference(s)).
☐ Form(s) PTO/SB/08B (N/A page(s), with copy of no reference(s)).
☐ Listing of Pending Applications (N/A page(s), with copy of no application(s)).
☐ Other: N/A

Citation of such information shall not be construed as (i) an admission that the information necessarily is, or corresponds to, prior art with respect to the instant invention, (ii) a representation that a search has been made, other than as described herein, or (iii) an admission that the information cited herein is, or is considered to be, material to patentability as defined in § 1.56(b).

For each item of information listed that is not in the English language, the undersigned has provided a concise explanation of the relevance through (i) an English language abstract, (ii) an English language equivalent application, or (iii) if cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action that indicates the degree of relevance found by the foreign office.

CERTAIN COPIES NOT INCLUDED

Pursuant to operative regulations, certain copies need not be provided and corresponding information is identified in this Information Disclosure Statement by citation only. In particular,

- ☒ In accordance with 37 C.F.R. § 1.98(a)(2)(ii), copies of cited U.S. Patents and U.S. Patent Application Publications are not included.
- ☐ Certain information was submitted to, or cited by, the Office in Application No(s). N/A, filed N/A, to which the above-identified application claims priority under 35 U.S.C. § 120. In accordance with 37 C.F.R. § 1.98(d), copies of that information are not included.
- ☐ Pursuant to 1287 OG 163 (October 19, 2004), for those cited pending U.S. patent applications filed (or which entered the national stage under 35 U.S.C. § 371) on or after June 30, 2003 or which are otherwise stored in the USPTO's Image File Wrapper system, copies are not included.

FEE AUTHORIZATION

The undersigned believes that this Information Disclosure Statement is being filed before the mailing date of (i) a final action under § 1.113, (ii) a notice of allowance under § 1.311 or (iii) an action that otherwise closes prosecution. Accordingly, this Information Disclosure Statement is accompanied by the fee set forth in § 1.17(p) as follows:

- ☒ A check in the amount of \$180.00 is enclosed herewith.
- ☐ The undersigned hereby authorizes the Commissioner to charge the fee set forth in § 1.17(p) to Deposit Account No. n/a.

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- ☒ deposited with the US Postal Service with sufficient postage as first class mail and addressed as shown above.
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Michael R. Long 09-23-05
Michael R. Long Date

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Respectfully submitted,



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